

CLAIMS

What is claimed is:

1. An ultrasonic diagnostic system for preparing a diagnostic data including image by transmitting ultrasonic pulses to a living tissue, and receiving and analyzing reflected wave of the ultrasonic pulses, the ultrasonic diagnostic system comprising:
an analytical processing unit to measure a backscattering intensity by using a scattering wave from a region of interest in the living tissue on a basis of the reflected wave which is received, and to detect a variation frequency of the measured backscattering intensity to obtain the diagnostic data to be available.
2. The ultrasonic diagnostic system according to claim 1, wherein the ultrasonic pulses are transmitted at a high repeated transmission frequency of a few kHz to measure the backscattering intensity.
3. The ultrasonic diagnostic system according to claim 1 or claim 2, wherein the analytical processing unit further comprises:
means for calculating a displacement waveform of the region of interest by applying a phased tracking method to the reflected wave signal which is received.
4. The ultrasonic diagnostic system according to claim 3, wherein the analytical processing unit further comprises:
means for calculating the backscattering intensity on the displacement waveform of the region of interest calculated by applying the phased tracking method.
5. The ultrasonic diagnostic system according to claim 4, wherein the analytical processing unit further comprises:
means for detecting the variation frequency or the variation cycle of the calculated backscattering intensity.

6. The ultrasonic diagnostic system according to claim 5, wherein the variation frequency of the backscattering intensity is a frequency of tens to hundreds of Hz.

7. The ultrasonic diagnostic system according to claim 5 or claim 6, wherein the analytical processing unit further comprises:

means for displaying in an assessable manner the instantaneous thickness variation velocity of the region of interest on the basis of the variation frequency or the variation cycle of the detected backscattering intensity.

8. The ultrasonic diagnostic system according to claim 7, wherein the means for displaying has a function to convert the variation frequency or the variation cycle of the backscattering intensity of the region of interest into a suitable color or a density level according to a predetermined color bar or gray scale, and to display it in the converted form on a screen.

9. The ultrasonic diagnostic system according to claim 8, wherein the function to display on the screen is to display superimposed over an M-mode image the value of the variation frequency or the variation cycle of the backscattering intensity converted into a color or a density level.

10. An ultrasonic diagnostic method for preparing a diagnostic data including image by transmitting ultrasonic pulses to a living tissue, and receiving and analyzing reflected wave of the ultrasonic pulses, the ultrasonic diagnostic method comprising:

measuring a backscattering intensity by using a scattering wave from a region of interest in the living tissue on a basis of the reflected wave which is received; and

detecting a variation frequency of the measured backscattering intensity to obtain the diagnostic data to be available.

11. The ultrasonic diagnostic method according to claim 10, wherein the ultrasonic pulses are transmitted at a high repeated transmission frequency of a few kHz to measure the backscattering intensity.
12. The ultrasonic diagnostic method according to claim 10 or claim 11, wherein the displacement waveform of the region of interest is calculated by applying a phased tracking method to the reflected wave signal which is received.
13. The ultrasonic diagnostic method according to claim 12, wherein the backscattering intensity is calculated on the displacement waveform of the region of interest calculated by applying the phased tracking method.
14. The ultrasonic diagnostic method according to claim 13, wherein the variation frequency or the variation cycle of the calculated backscattering intensity is detected.
15. The ultrasonic diagnostic method according to claim 14, wherein the variation frequency of the backscattering intensity is a frequency of tens to hundreds of Hz.
16. The ultrasonic diagnostic method according to claim 14 or claim 15, wherein the instantaneous thickness variation velocity of the region of interest is displayed in an assessable manner on the basis of the variation frequency or the variation cycle of the detected backscattering intensity.
17. The ultrasonic diagnostic method according to claim 16, wherein the variation frequency or the variation cycle of the backscattering intensity of the region of interest is converted into a suitable color or a density level according to a predetermined color bar or gray scale and is displayed in the converted form on a screen, in order to display in an assessable manner the instantaneous thickness variation velocity of the region of interest.

18. The ultrasonic diagnostic method according to claim 17, wherein the value of the variation frequency or the variation cycle of the backscattering intensity converted into a color or a density level is displayed by superimposing over an M-mode image.